LOW POWER AUDIO AMPLIFIER—YD8602

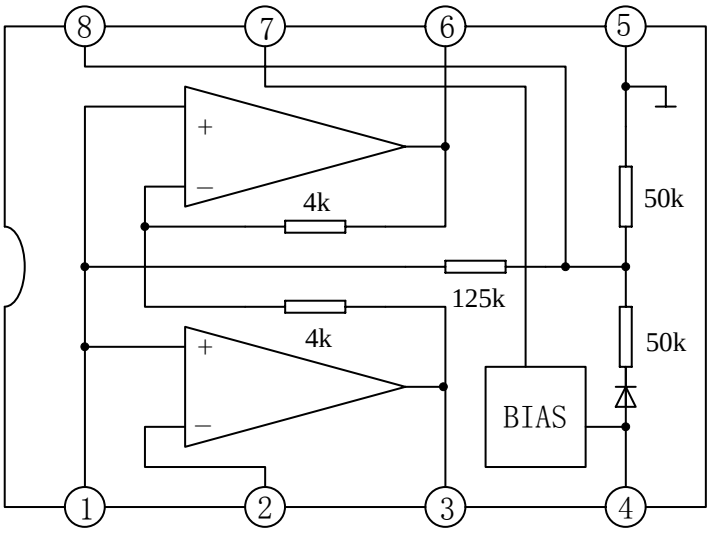
DESCRIPTION

The YD8602 is the audio power amplifier available for low voltage. It supplies differential outputs for maximizing output swing at low voltages.

FEATURES

*Wide operating supply voltage: Vcc=2~6V;
*Low quiescent supply current (Icc=2.7mA, typ.);
*Medium output power
Po=250mW at Vcc=6V, R_L=32Ω, THD=10%;
*Load impedance range (8Ω to 100Ω);
*Low distortion;
*Mute function (Icc=65μA, typ.);
*Minimum number of external parts required.

BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATINGS (Tamb=25℃)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	8	V
Output Current	Io	250	mA
Maximum Input Voltage	Vi	-1.0~Vcc+1.0	V
Junction Temperature	Tj	-55～+150	℃

RECOMMENDED OPERATION CONDITIONS (Tamb=25℃)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	Vcc	2.0	4.2	6	V
Load Impedance	R_L	8	32	100	Ω
Peak Load Current	Iop		100	200	mA
Differential Gain(5kHz Bandwidth)	Gv	0	30	46	dB
Voltage at Mute	Vi(mute)	0		Vcc	V
Ambient Temperature	Tamb	-20		+70	℃

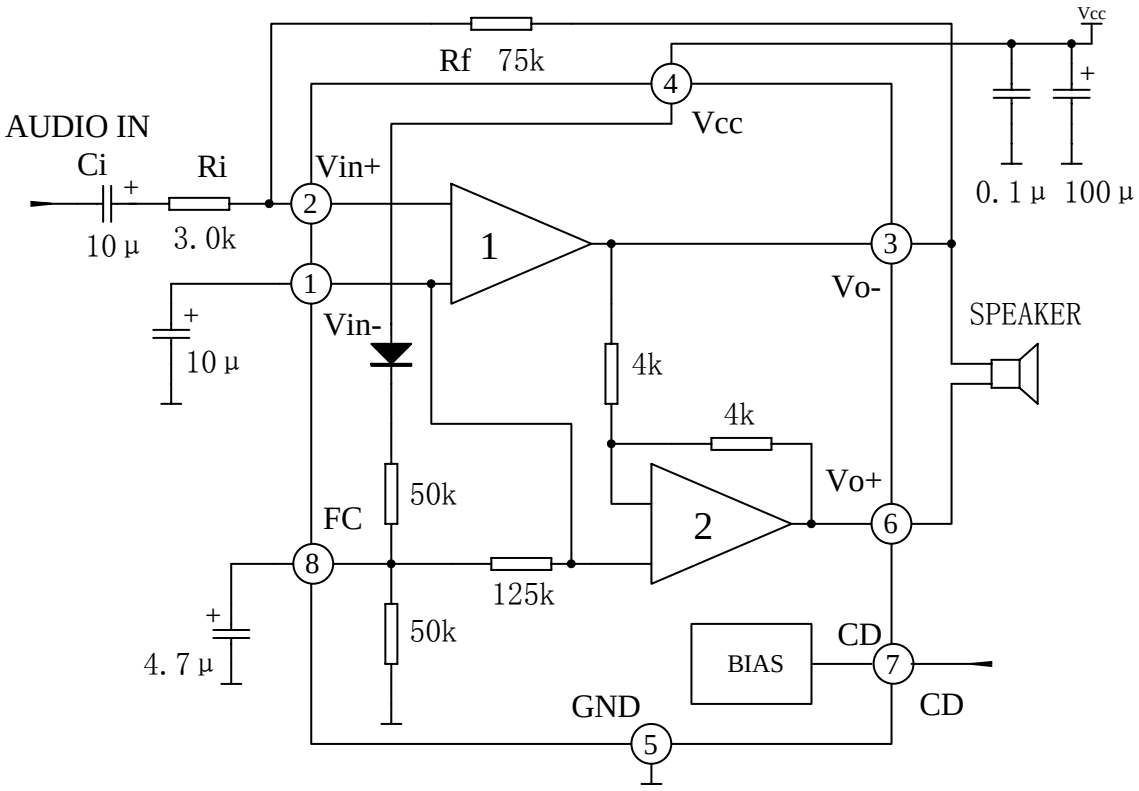
ELECTRICAL CHARACTERISTICS

(Tamb=25℃, Vcc=6V, Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Current	Iccq	Vcc=3.0V, Mute=0.8V		2.7	4.0	mA
		Vcc=16.0, Mute=0.8V		3.3	5.0	mA
		Vcc=3.0V, Mute=2.0V		65	100	μA
Output DC Voltage	Vo	Vcc=3.0V, R_L=16Ω, Rf=75kΩ	1.0	1.15	1.25	V
		Vcc=6.0V, R_L=16Ω, Rf=75kΩ		2.65		
Output Offset Voltage	Δ Vo	Vcc=6.0V, Rf=75kΩ, R_L =32Ω	-30	0	+30	mV
Output High Level	V_{OH}	2.0V＜Vcc＜6V, Io=-75mA		Vcc -1.0		V
Output Low Level	V_{OL}	2.0V＜Vcc＜6V, lout=75mA		0.16		V
Input Bias Current	I_{IB}			-100	-200	nA
Equivalent Resistance	Ri	Pin2	100	150	220	kΩ
	R_F	Pin8	18	25	40	kΩ

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Open Loop Gain of Amp 1	Gvo		80			dB
Open Loop Gain of Amp 2	Gv	f=1.0kHz, R_L=32Ω	-0.35	0	0.35	dB
Output Power	Po	Vcc=3.0V, R_L=6Ω, THD≤10%	55			mW
		Vcc=6.0V, R_L =32Ω, HD≤10%	250			
Total Harmonic Distortion	THD	Vcc=6.0V, R_L =32Ω, Po=125mW		0.5	1.0	%
		Vcc＜3.0V, R_L =8Ω, Po=20mW		0.5		
Gain Bandwidth	BW			1.5		MHz
Power Supply rejection	RR	Vcc=6.0V, ΔVcc=3.0V, fr=100Hz	50			dB
Muting	G_{MUT}	Mute=2.0V, V_{CD}=2.0V , 1.0kHz＜f＜20kHz,	70			dB

APPLICATION CIRCUIT



SOP-8

unit:mm